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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/776,846	02/06/2001	Sung-nam Lee	030681-280	6862
75	10/29/2003		EXAM	INER
Charles F. Wieland III			CRANE, SARA W	
BURNS, DOAN	NE, SWECKER & MAT	HIS, L.L.P.		
P.O. BOX 1404 ART UNIT		PAPER NUMBER		
Alexandria, VA 22313-1404			2811	

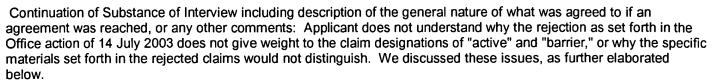
DATE MAILED: 10/29/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

			an.
	Application No.	Applicant(s)	
Interview Summary	09/776,846	LEE ET AL.	
	Examin r	Art Unit	
	Sara W. Crane	2811	
All participants (applicant, applicant's representative, PT	O personnel):		
(1) Sara W. Crane.	(3)		
(2) <u>Douglas Pearson</u> .	(4)		
Date of Interview: 24 October 2003.			
Type: a)⊠ Telephonic b)□ Video Conference c)□ Personal [copy given to: 1)□ applicant	2)☐ applicant's representativ	e]	
Exhibit shown or demonstration conducted: d) Yes If Yes, brief description:	e)⊠ No.		
Claim(s) discussed: <u>1</u> .			
Identification of prior art discussed: as in the rejection of	<u>claim 1</u> .		
Agreement with respect to the claims f)☐ was reached.	g)□ was not reached. h)⊠ I	N/A.	
Substance of Interview including description of the gener reached, or any other comments: <u>See Continuation Shee</u>		if an agreement	was
(A fuller description, if necessary, and a copy of the amerallowable, if available, must be attached. Also, where no allowable is available, a summary thereof must be attach	copy of the amendments that v		
THE FORMAL WRITTEN REPLY TO THE LAST OFFICE INTERVIEW. (See MPEP Section 713.04). If a reply to the GIVEN ONE-MONTH FROM THIS INTERVIEW DATE, OFFICE A STATEMENT Summary of Record of Interview requirements on reverse	he last Office action has already IN THE MAILING DATE OF THE OF THE SUBSTANCE OF THE	y been filed, APP S INTERWIEW S	PLISANT IS SUMMARY

Examiner Note: You must sign this form unless it is an Attachment to a signed Office action.

Examiner's signature, if required



As noted in the Office action of 20 November 2001, the examiner does not see any way to distinguish a superlattice or multi-quantum well layer (made of alternating layers of high and low bandgap materials) from the "active layer" and "multi-quantum barrier layers" as set forth in the first six lines of claim 1, for example. Note that claim 1 allows the "active layer" to be GaN, and one of the two "barrier layers" can also be GaN, so there would presumably be no necessary structural distinction between the functional designation of "active" versus "barrier." In any case, in a prior art superlattice or multi-quantum well layer, any one of the layers of lower bandgap could be identified as an "active layer," and pairs of layers on either side of such a layer could be identified as "barrier layers," because each of the designation functions ("active" and "barrier") would be met by such layers. In other words, patentable weight is given to functional language such as "active" or "barrier" only when that language necessarily gives rise to a structural distinction in the product claimed. Specifically, in the prior art device of Hatakoshi figure 1, for example, the multiquantum well layer 16 would have a layer of lower bandgap that could be identified as an "active layer," and pairs of layers on either side of such a layer could be identified as "barrier layers." Patentable weight would not be given to the functional language of "active" or "barrier" in the rejected claims, because that language does not necessarily give rise to a structural distinction in the product claimed, as compared to the structure set forth in the prior art of Nagahama et al. If Applicant is relying on the claim language of "active" or "barrier" to provide a structural distinction, an explanation needs to be set forth in the record stating specifically what that structural distinction is.

Also, in the semiconductor art, substitution of one semiconductor material for another is usually regarded as prima facie obvious, as for example when substituting a high bandgap material for another high bandgap material, and a low bandgap material for another low bandgap material. For example, it is well known to choose a particular low bandgap material because one desires a particular wavelength of light emission, and then to choose barrier layers in a superlattice or MQW structure in order to provide necessary light and current barriers. One similarly chooses materials for waveguide, clad, substrate, and so forth, in order to provide lattice matching and crystal growth substrates for the desired MQW materials. With respect to claim 1, for example, the superlattice or MQW structure of AlGaN/GaN is known, as shown by the Nagahama reference. It would have been prima facie obvious to use the alternate semiconductor materials of AlGaN and GaN, as taught in the Nagahama reference, instead of the materials used in the Hatakoshi superlattice or MQW layers, for the reasons noted above or in the Office action of 14 July 2003, i.e., to tailor the device to produce a specific wavelength of light output, and to provide the rest of the device layers necessary to produce such a device. Prima facie obviousness can be overcome by a showing of unexpected results arising from the combination of features recited, for example, or by arguments addressed to other factors as set forth in the case law.